REGULATORY INTERPRETATION GUIDANCE
Regulation No. 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation
May 2, 2007

The Delaware Department of Natural Resources and Environmental Control (DNREC) promulgated Regulation 1146, Electric Generating Unit (EGU) Multi-Pollutant Regulation, effective December 11, 2006.

Section 2.0 of Regulation 1146, Applicability, states that "This regulation applies to coal-fired and *residual oil*-fired electric generating *units* located in Delaware with a *nameplate capacity* rating of 25 MW or greater that commenced operation on or before the effective date of this regulation." Section 3.0 of Regulation 1146 defines residual oil as "No. 5 or No. 6 fuel oil."

In accordance with the above definitions, if a unit fires any amount of residual fuel oil, and meets the other applicability criteria of Section 2.0, then that unit is subject to the requirements of Regulation 1146.

Distillate fuel oils consist of distilled petroleum fractions from a refinery and generally have a relatively low density and viscosity, and are generally referred to as No.1 or No.2 grade. Residual fuel oils are the residuals or bottoms remaining after distillation and generally have higher density and viscosity, and are generally referred to as No. 5 and No. 6 grade. No. 4 fuel oil is a mix of varying proportions, depending upon feedstocks and customer specification, of distillate fuel oil (usually No. 2 fuel oil) and residual fuel oil (usually No. 6 fuel oil). No. 4 fuel oil is alternately referred to as a distillate fuel oil and residual fuel oil by various information sources.

No. 4 oil is defined by the Energy Information Administration (EIA) as follows: "This grade is a blend of distillate fuel oil and residual fuel oil stocks that conforms to ASTM Specification D396 or Federal Specification VV-F-815C; with minimum and maximum kinematic viscosities between 5.8 and 26.4 centistokes at 100 deg F." The viscosity values identified in the EIA definition also correspond to the American Society of Testing and Materials (ASTM) guidelines for minimum and maximum viscosity values for No. 4 fuel oil.

Further, the Department has historically defined distillate fuel oils in a manner consistent with the EIA and ASTM guidelines. Regulation No. 1, Definitions and Administrative Principles, of the State of Delaware Regulations Governing the Control of Air Pollution, defines distillate fuel oil as follows: "Any liquid fuel derived directly or indirectly as the distilled product of crude petroleum, and having a maximum Saybolt Universal viscosity of forty (40) seconds at one hundred (100) degrees Fahrenheit." The Regulation 1 definition of a Saybolt Universal viscosity of 40 seconds at 100 deg F corresponds to 4.3 centistokes at 100 deg F, which is lower than the EIA and ASTM standards for minimum viscosity for No. 4 fuel oil identified in the previous paragraph.

In agreement with the EIA definition of No. 4 fuel oil, a number of other references (fuel oil refiners, fuel oil suppliers, other state agencies, etc) define No. 4 fuel oil as a blend of distillate (such as No. 2 fuel oil) and residual fuel oil (such as No. 6 fuel oil). Some of those references are identified at the end of this document. Some of the references indicate that the exact mixture percentages of distillate and residual fuel oils in a given shipment of No. 4 fuel oil may vary due to variations in the feed stocks and specifications of the purchaser.

Since No. 4 fuel oil is a mixture of distillate fuel oil and residual fuel oil, combusting No. 4 fuel oil in any unit that would otherwise be subject to Regulation 1146 constitutes the combustion of residual fuel oil in a unit subject to Regulation 1146.

References:

No. 4 Fuel Oil Material Safety Data Sheet No. 15054, dated 7/1/2006, Hess Corporation, http://www.hess.com/ehs/msds/15054No4FuelOil.pdf

Marathon No. 4 Fuel Oil Material Safety Data Sheet 0242MAR019, dated 7/25/2006, Marathon Petroleum Company, http://www.mapllc.com/MSDS/0242MAR019.PDF

No. 4 Fuel Oil Material Safety Data Sheet, dated 9/29/01, Global Companies, http://www.globalp.com/docs/MSDS%204%20Oil_2006%20.pdf

Regulation 1, Definitions and Administrative Principles, State of Delaware Regulations Governing the Control of Air Pollution, http://www.dnrec.state.de.us/air/aqm_page/docs/pdf/reg_1.pdf

Definitions of Motor Fuels and Refined Products, California Energy Commission, http://www.energy.ca.gov/gasoline/types_of_gasoline.html

Definitions of Petroleum Products and Other Terms, Energy Information Administration, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/petroleum_supply_monthly/historical/2006/2006_06/pdf/psmdefs.pdf

Energy from Fuel Oil, Edison Electric Institute, http://www.eei.org/industry_issues/energy_infrastructure/fuel_diversity/oil/index.htm